



1 Empire March: Official No 167743.  
Messrs Vickers Armstrongs 788  
Profile and Recko - as fitted.

Barrow Report No 2885.



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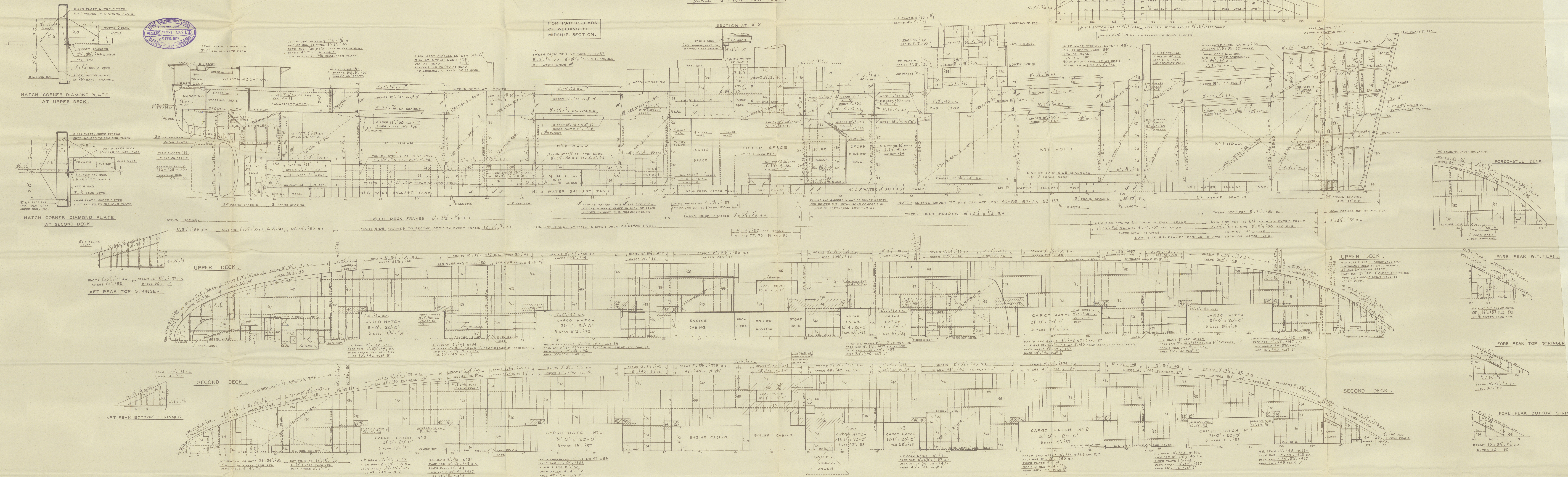
Lloyd's Register  
Foundation

W1195-0042



## Y TYPE STEAM CARGO VESSEL. (AS FITTED.)

SCALE  $\frac{1}{8}$  INCH = ONE FOOT





Empire march. Official No 167743.  
Messrs Vickers Armstrongs 788  
midship section - as fitted -

Barrow Report No 2885



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W1195-0040



# "EMPIRE MARCH."

## Y TYPE STEAM CARGO VESSEL.

### MIDSHIP SECTION. (AS FITTED)

SCALE 1/2 INCH = ONE FOOT

CLASS 100 A1 WITH FREEBOARD LLOYDS SPECIAL SURVEY.

425'-0" B.P. ON L.W.L. OF 24'-7 1/2" x 56'-0" MLD. 56'-3" EXT. x 27'-9" MLD. TO 2ND DECK. 36'-10" MLD. TO UPPER DECK. THE SCANTLING IS SUITABLE FOR A DRAUGHT 18" IN EXCESS OF THAT CORRESPONDING TO THE FREEBOARD. WHICH COULD BE ASSIGNED TO A COMPLETE SUPERSTRUCTURE VESSEL WITH A TONNAGE OPENING FITTED. THE SCANTLING OF ANGLE, BULB ANGLE AND CHANNEL SECTIONS GIVEN ON THIS PLAN ARE N.B.S. AND ARE IN ACCORDANCE WITH THE EMERGENCY PROGRAMME LIST.

#### LLOYDS NUMERALS.

FIRST LONGITUDINAL NUMBER L x D = 425'-0" x 35'-7 1/2"	=	15193.75
SECOND LONGITUDINAL NUMBER L x (B+D) = 425'-0" x (56'-0" + 35'-7 1/2")	=	58935.75
Y TO UPPER DECK = 425'-0" x 36'-8 1/2"	=	11.54
D MOULDED DEPTH = 27'-7 1/2" + 8'-0"	=	35.75
d = 36'-7 1/2" - (9'-0" + 3'-7 1/2") - 3" FOR HIGHER BKT.	=	23.9
d AT HALF LENGTH FORWARD.	=	26.39

#### EQUIPMENT NUMBER.

SECOND LONGITUDINAL NUMBER = 425'-0" x (56'-0" + 36'-7 1/2")	=	39418.75
FORECASTLE = 40'-0" x 7'-8 x 3/4"	=	228.00
MIDSHIP ACCOMMODATION & CASING = 72'-25" x 8'-0" x 1/2"	=	229.00
SALOON ACCOMMODATION = 30'-9" x 7'-5 x 1/2"	=	115.00
EQUIPMENT NUMBER	=	40047.75

#### EQUIPMENT.

2 BOWER ANCHORS 68 CWT'S EACH STOCKLESS.  
DISPENSED WITH AS A WAR MEASURE 1 BOWER ANCHOR 58 1/2 CWT'S.  
1 STREAM ANCHOR 19 CWT'S. EX - STOCK.  
225 FATHOMS 2 1/2" STUD CHAIN CABLE 600 CWT'S. (RULE 270 FATHOMS).  
90 FATHOMS 3 1/2" FLEXIBLE STEEL WIRE 6 1/2"  
120 FATHOMS 4 1/2" SPECIAL FLEXIBLE STEEL WIRE 6 1/2"  
2 HAWESERS 90 FATHOMS 2 1/2" FLEXIBLE STEEL WIRE 6 1/2"  
2 WARPS 90 FATHOMS 2 1/2" FLEXIBLE STEEL WIRE 6 1/2".

EQUIPMENT IN ACCORDANCE WITH WAR REQUIREMENT.

#### RIVETING NOTE.

RIVETS IN FRAMES TO FLOORS AND CROSS TIE PLATES IN AFT PEAK SPACED 5 DIAS. APART CR. TO CR.  
7/8 DIA. RIVETS IN FRAMES TO SHELL AT FLAT OF DOUBLE BOTTOM, FORWARD HALF LENGTH FORWARD SPACED 5 1/2 DIAS. (TWO ROWS).  
3/4 DIA. RIVETS IN FRAMES TO FLOORS AT FLAT OF DOUBLE BOTTOM, FORWARD HALF LENGTH FORWARD SPACED 6 1/2 DIAS. (TWO ROWS).  
RIVETS IN SIDE FRAMES TO SHELL SPACED 6 1/2 DIAS. APART. 5 1/2 DIAS. APART IN WAY OF FORE & AFT PEAK TANKS AND DEEP FRAMING FORWARD.  
RIVETS IN BOTTOM FRAMES TO SHELL AFT HALF LENGTH FORWARD 7 DIAS. APART CR. TO CR.  
RIVETS IN SEAMS OF SHELL PLATING DECK PLATING AND INNER BOTTOM PLATING AS PER TABLE 40.  
RIVETS IN SEAMS OF BULKHEAD AND TUNNEL PLATING MARGIN ANGLES AND WEATHER STRINGER ANGLES AND BULKHEAD TO BULKHEAD SPACED 4 1/2 DIAS. APART CR. TO CR.  
RIVETS IN FLAT KEEL ANGLES, VERTICAL ANGLES CONNECTING FLOORS TO CENTRE GIRDER AND SHELL FLANGE OF WATERTIGHT BULKHEAD FRAME SPACED 5 DIAS. APART CR. TO CR.  
RIVETS IN FRAMES TO FLOORS AFT HALF LENGTH FORWARD REVERSE FRAMES TO FLOORS AND INNER BOTTOM PLATING.  
VERTICAL ANGLES TO FLOORS AND SIDE GIRDERS IN BULKHEAD STIFFENERS (EXCEPT PEAK BULKHEADS) AND IN DECK PLATING TO BEAMS ON EVERY FRAME SPACED 7 DIAS. APART CR. TO CR.  
RIVETS IN CENTRE GIRDER TOP ANGLES BOTH FLANGES SPACED 7 DIAS. APART CR. TO CR. NON-WATERTIGHT. 5 DIAS. IN WAY OF CENTRE LINE BULKHEAD.  
RIVETS IN CENTRE GIRDER TOP ANGLES BOTH FLANGES SPACED 5 DIAS. APART CR. TO CR. WATERTIGHT.

#### SCHEME OF WELDING.

BUTTS OF SHELL PLATING  
BUTTS OF DECK PLATING  
BUTTS OF TANK TOP PLATING  
BUTTS OF CENTRE GIRDER AND MARGIN PLATES  
BUTTS OF W.T. BULKHEADS  
BUTTS OF TUNNEL PLATING  
VENTILATOR COAMINGS TO DECK AND COAMINGS.

ALL BUTTS VEE WELDED WITH BACK RUN.

#### STEM.

OF FLANGED PLATES TO SUIT PLANING SHOE SEE PROFILE.

#### STERNPOST.

CAST STEEL WITH 5 GUDGONS.

#### RUDDER.

WELDED DOUBLE PLATES 5/8" AND 1" STOCK 1 1/2" DIA. CAST STEEL (RULE 11').

TOP GUDGON CAST STEEL.

OTHER GUDGONS MILD STEEL.



#### DISPOSITION OF FLOORS.

SOLID FLOORS ON EVERY FRAME IN ENGINE SPACE AND FORWARD 3/5 LENGTH FORWARD UNDER BOILER BEARERS. PARTIAL SOLID UNDER THRUST. ELSEWHERE SOLID FLOORS ON EVERY THIRD FRAME. BRACKET FLOORS INTERMEDIATE. SEE PROFILE FOR STRENGTHENED FLOORS IN WAY OF WATERTIGHT BULKHEADS TO M.S. REQUIREMENTS.

#### CENTRE GIRDER.

43 1/2" x 54" FOR 1/2 LENGTH TO 1/46 AT ENDS.  
1/2 IN BOILER SPACE, ALL BUTTS WELDED.  
VERTICAL ANGLES 3 1/2" x 3 1/2" x 1/437.  
4" x 4" x 1/2" IN B.S. 6" x 6" x 1/2" SINGLE.  
UNDER ENGINE SPACE AND THRUST.  
SEATING 6" x 6" x 1/2" UNDER BOILER BEARERS.

SEE PROFILE WHERE WATERTIGHT.  
CENTRE GIRDER TOP ANGLES 4" x 4" x 1/2" FORE & AFT AND 4" x 4" x 1/2" B.S.

#### KEEL OUT

52" x 78" FOR 1/2 LENGTH TO 1/68 AT ENDS. BUTTS WELDED.

#### A IN

78" x 63" FOR 1/2 LENGTH TO 1/50 AT ENDS. BUTTS WELDED.

#### B OUT

69 1/2" x 63" FOR 1/2 LENGTH TO 1/50 AT ENDS. BUTTS WELDED.

#### C CLINKER

69 1/2" x 63" FOR 1/2 LENGTH TO 1/50 AT ENDS. BUTTS WELDED.

#### D IN

69 1/2" x 63" FOR 1/2 LENGTH TO 1/50 AT ENDS. BUTTS WELDED.

#### E OUT

78 1/2" x 63" FOR 1/2 LENGTH TO 1/50 AT ENDS. BUTTS WELDED.

#### F CLINKER

80 1/2" x 62" FOR 1/2 LENGTH TO 1/46 AT ENDS. BUTTS WELDED.

#### G IN

78 1/2" x 62" FOR 1/2 LENGTH TO 1/46 AT ENDS. BUTTS WELDED.

#### H OUT

78" x 62" FOR 1/2 LENGTH TO 1/46 AT ENDS. BUTTS WELDED.

#### J IN

78" x 62" FOR 1/2 LENGTH TO 1/46 AT ENDS. BUTTS WELDED.

#### K OUT

58" x 64" FOR 1/2 LENGTH TO 1/46 AT ENDS. BUTTS WELDED.

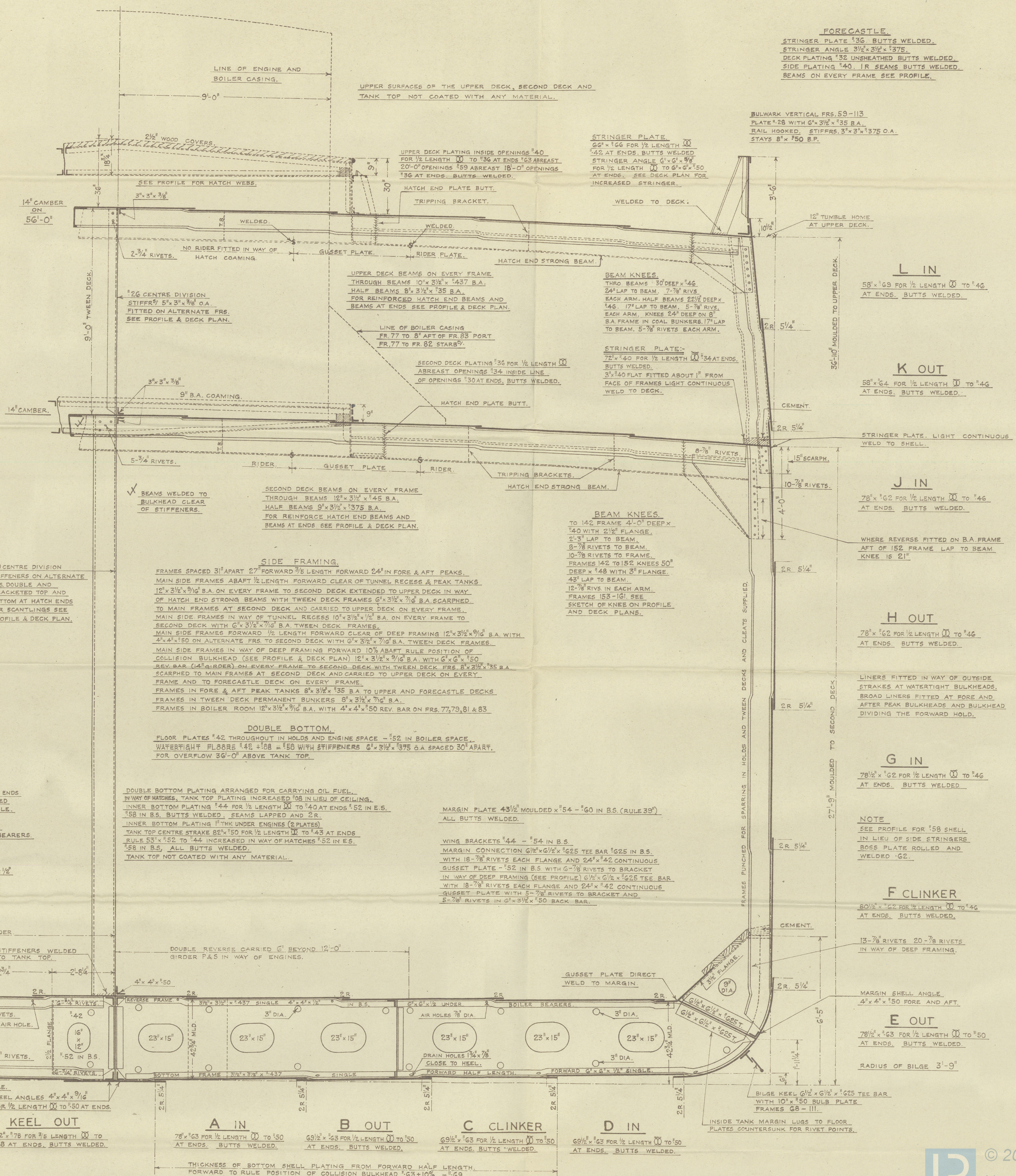
#### L IN

58" x 69" FOR 1/2 LENGTH TO 1/46 AT ENDS. BUTTS WELDED.

#### FORECASTLE.

STRINGER PLATE 1/36 BUTTS WELDED.  
STRINGER ANGLE 3 1/2" x 3 1/2" x 1/375.  
DECK PLATING 1/32 UNSHEATHED BUTTS WELDED.  
SIDE PLATING 1/40 1 R SEAMS BUTTS WELDED.  
BEAMS ON EVERY FRAME SEE PROFILE.

BULKHEAD VERTICAL FRG. 59-113.  
PLATE 1/28 WITH 6" x 3 1/2" x 1/35 B.A.  
RAIL HOOKED STIFFERS 3" x 3" x 1/375 O.A.  
STAYS 8" x 1/50 B.P.





① Plan of Crank Shaft  
Barclay Curle & Co Ltd  
Engs. 133/4 (DRG. 22.)

EW. 133 Empire Banner  
GLASGOW REPORT No. 64149  
EW. 134 EMPIRE MARCH  
GLASGOW REPORT No. 65126

RETAIN

W1195-0041

133  
64149  
81

W1195-0041



W1195-0041  
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NOTE:- ALL COUPLING BOLT HOLES TO BE  
BORED ACCURATELY ON GIVEN PITCH  
WITH 2 HOLES ON CRANK PIN &  
AS SHOWN.

SCALE: 6" = ONE FOOT.

DETAIL OF COUPLING. (K)

6 BOLTS IN COUPLING.

SCALE:  $1\frac{1}{2}'' = \text{ONE FOOT}$

DETAIL OF WEBS.

— NOTE : —

GRANK SHAFT, PINS & WEBS ALL OF

FORGED INGOT STEEL.

TO PASS LLOYDS SURVEY, FOR 1912-1-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009-1010-1011-1012-1013-1014-1015-1016-1017-1018-1019-1020-1021-1022-1023-1024-1025-1026-1027-1028-1029-1030-1031-1032-1033-1034-1035-1036-1037-1038-1039-1040-1041-1042-1043

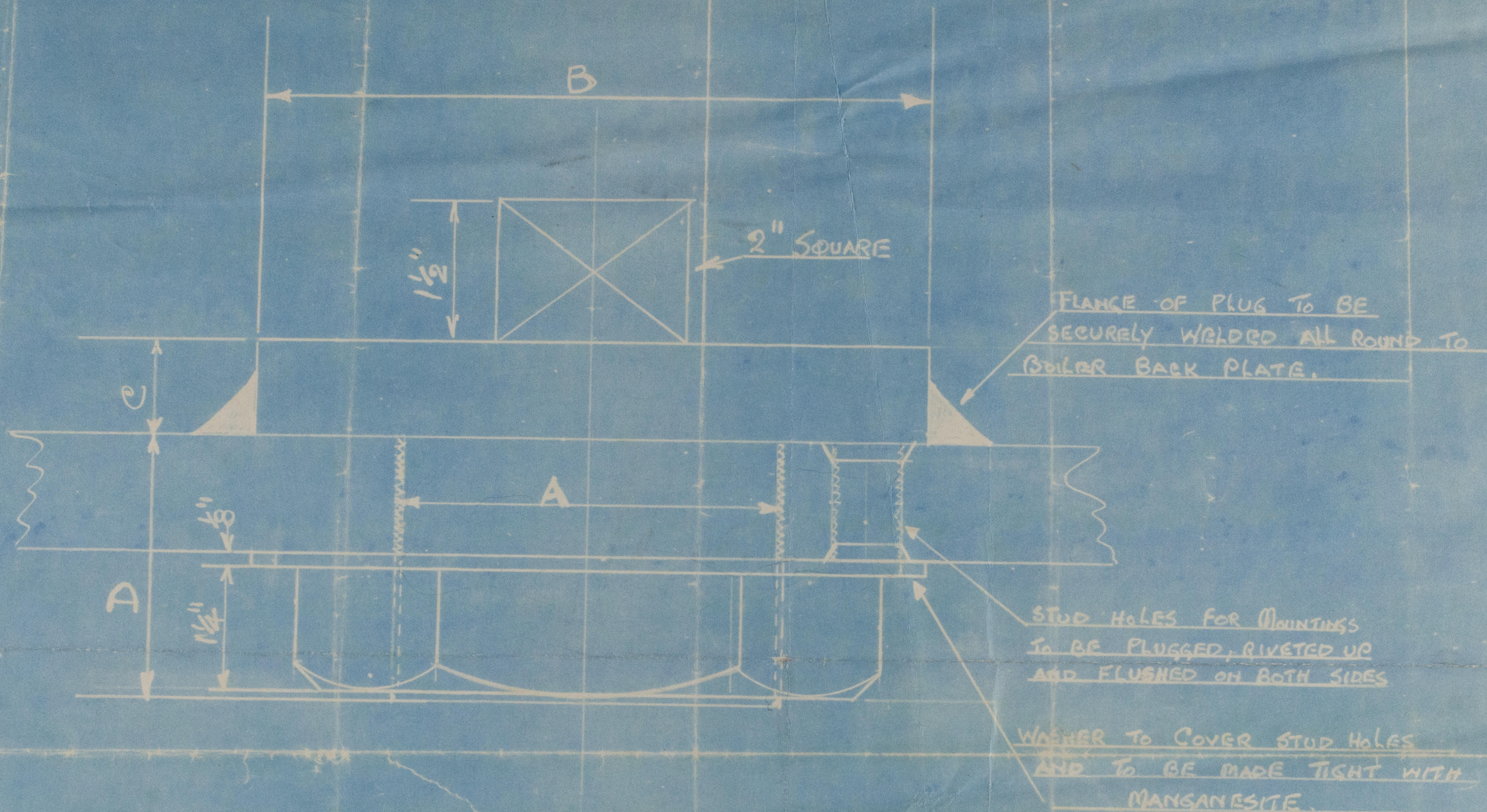
SCALE:- 1" = ONE FOOT & AS MARKED.

## CRANK SHAFT.

S.S. ENG. N<sup>o</sup> 5. EW 133 + EW 134

DRG N° 22  
W1195-0041



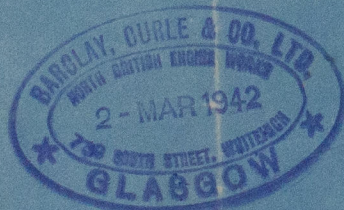


PURPOSE	N <sup>o</sup> OFF	A	B	C	D
WATER GAUGE TOP	1	4 1/8" - 9 THDS	7"	1"	2 3/4"
" " BOTT	1	4 1/8" - 9 THDS	7"	1"	2 3/8"
CHECK VALVES	2	2" GAS	5 3/4"	7/8"	2 3/8"

SB 41-3.

PLUGS FOR BOILER MOUNTING HOLES

SO 105



SKETCH NO BS 136

*Pls showing as to agree with Firm before work was commenced.*

APPROVED

LLOYD'S REGISTER OF SHIPPING

*J. R. Bewidge*

DATE 4/3/42



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Lloyd's Register Foundation  
W1195-0039



②

Barclay Curle & Co.

Aux. Boiler 41/3  
(EW. 134)

GLASGOW REPORT No. 65126

"EMPIRE MARCH"

RETAIN



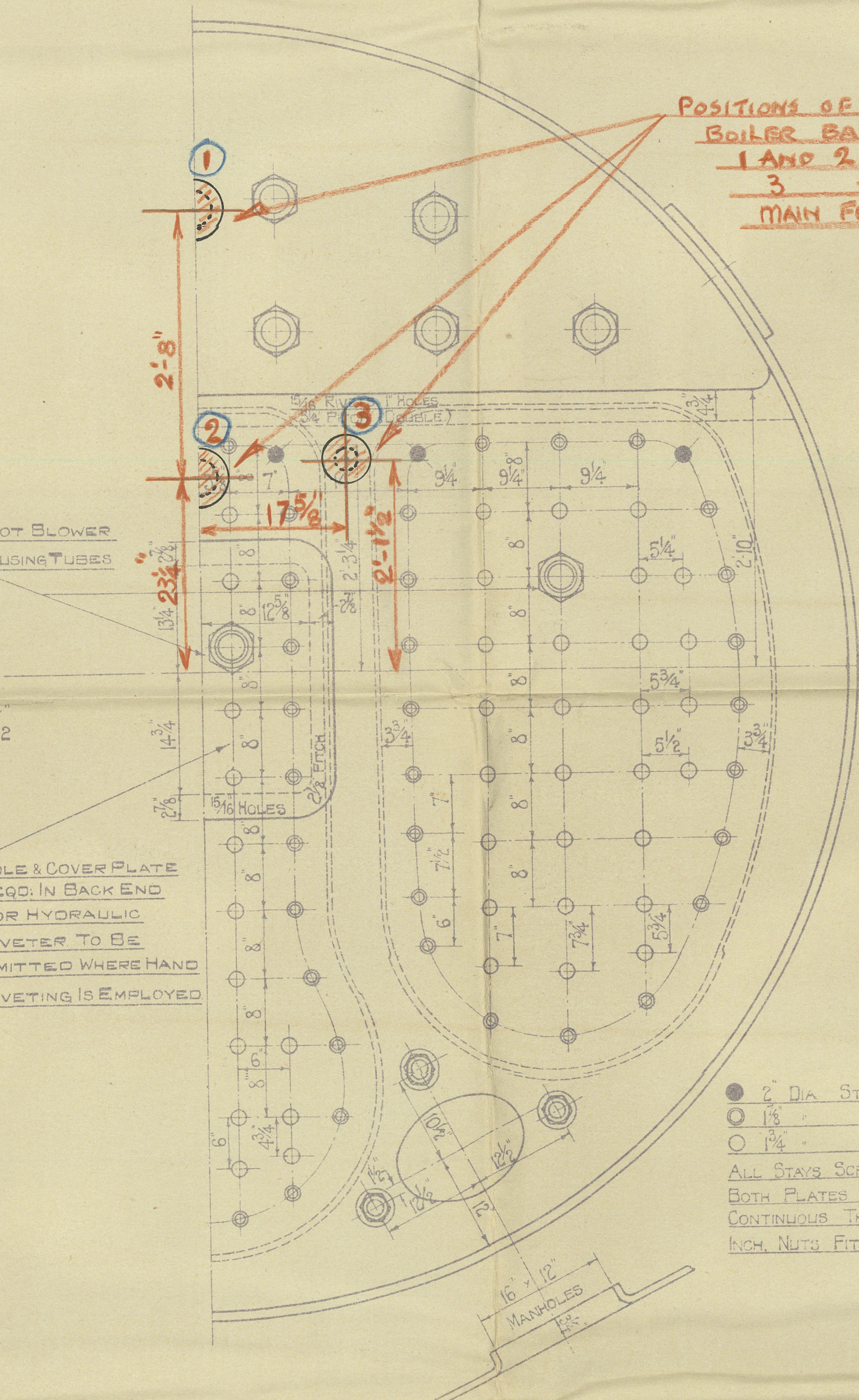
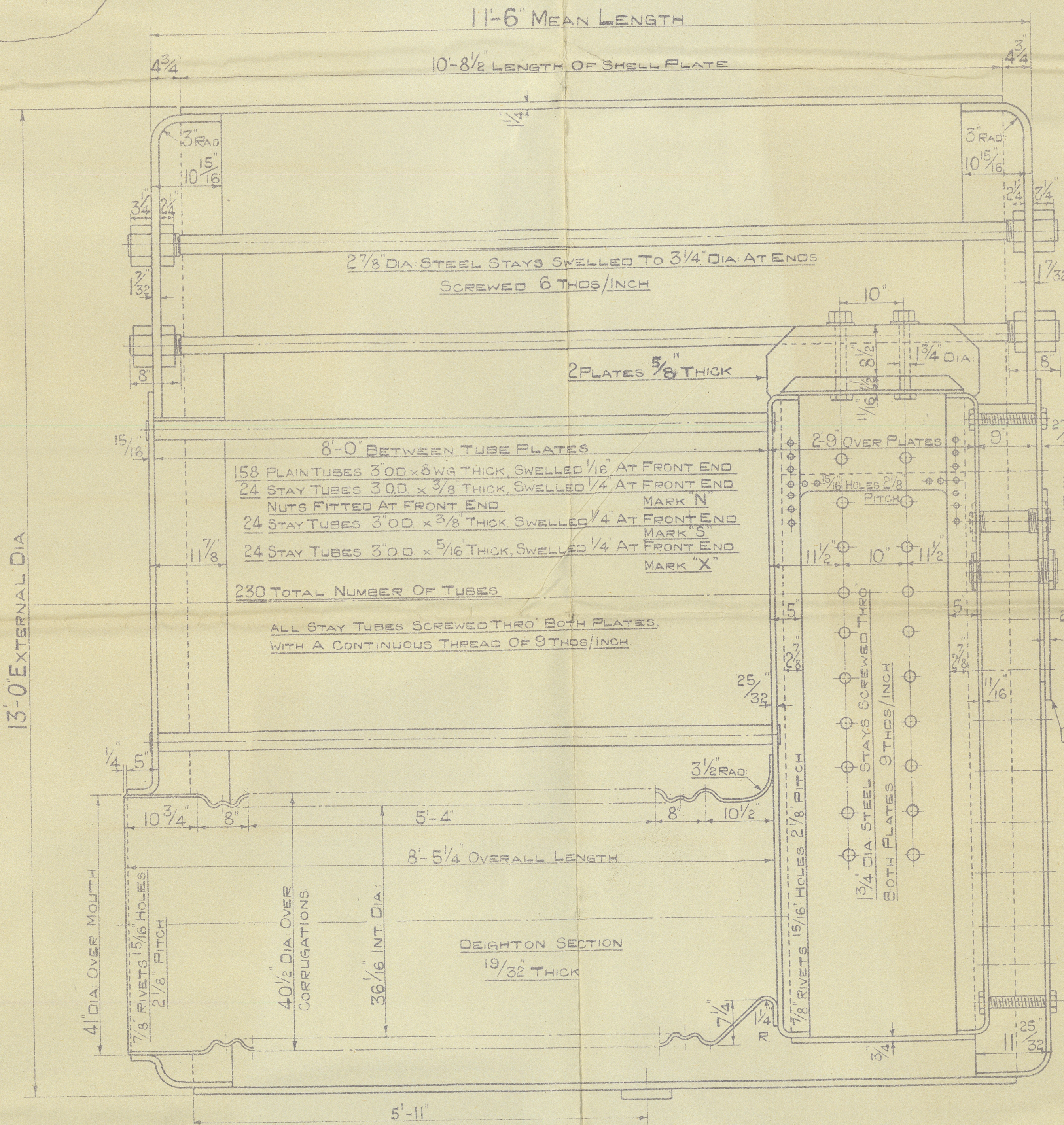
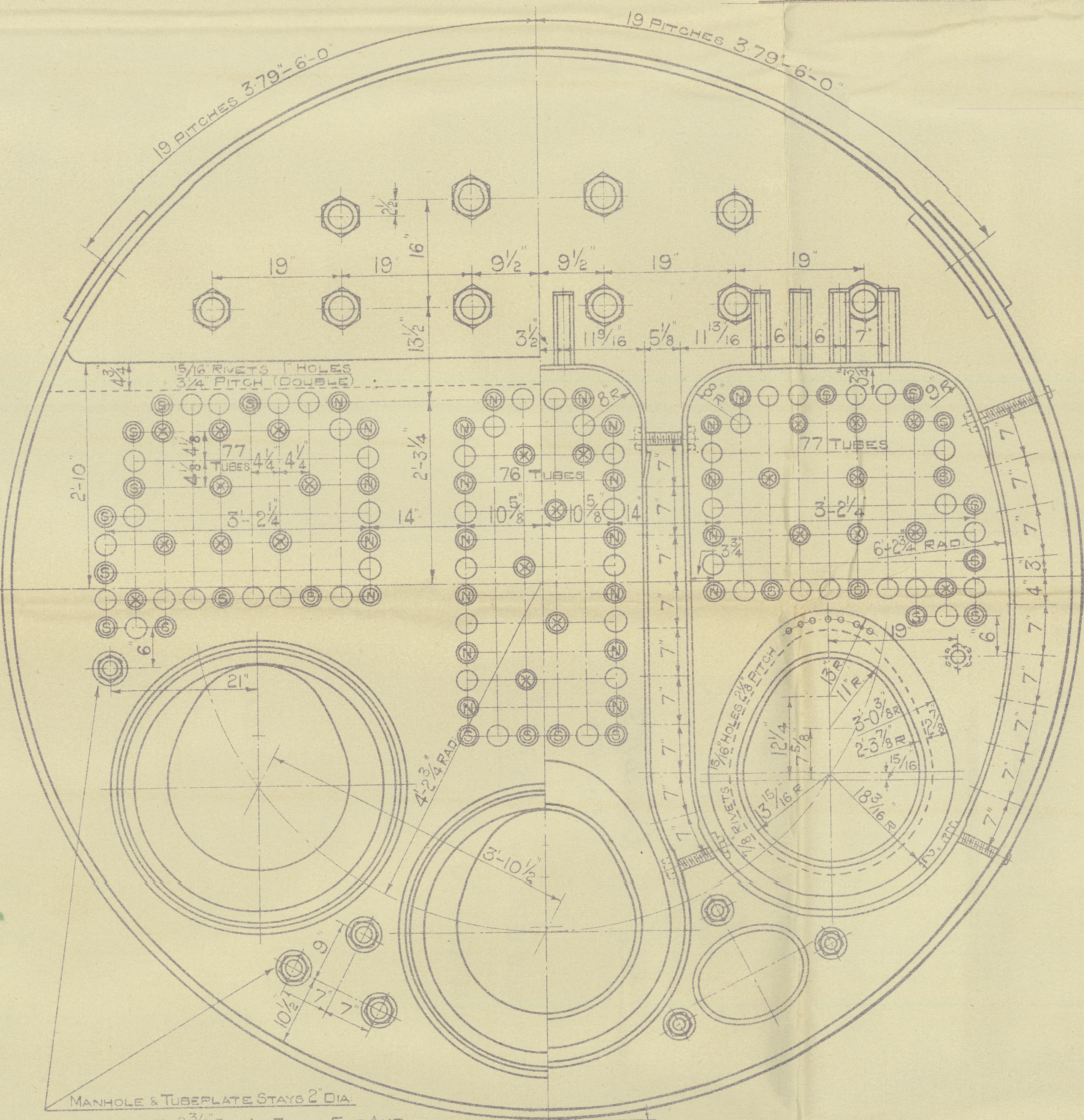
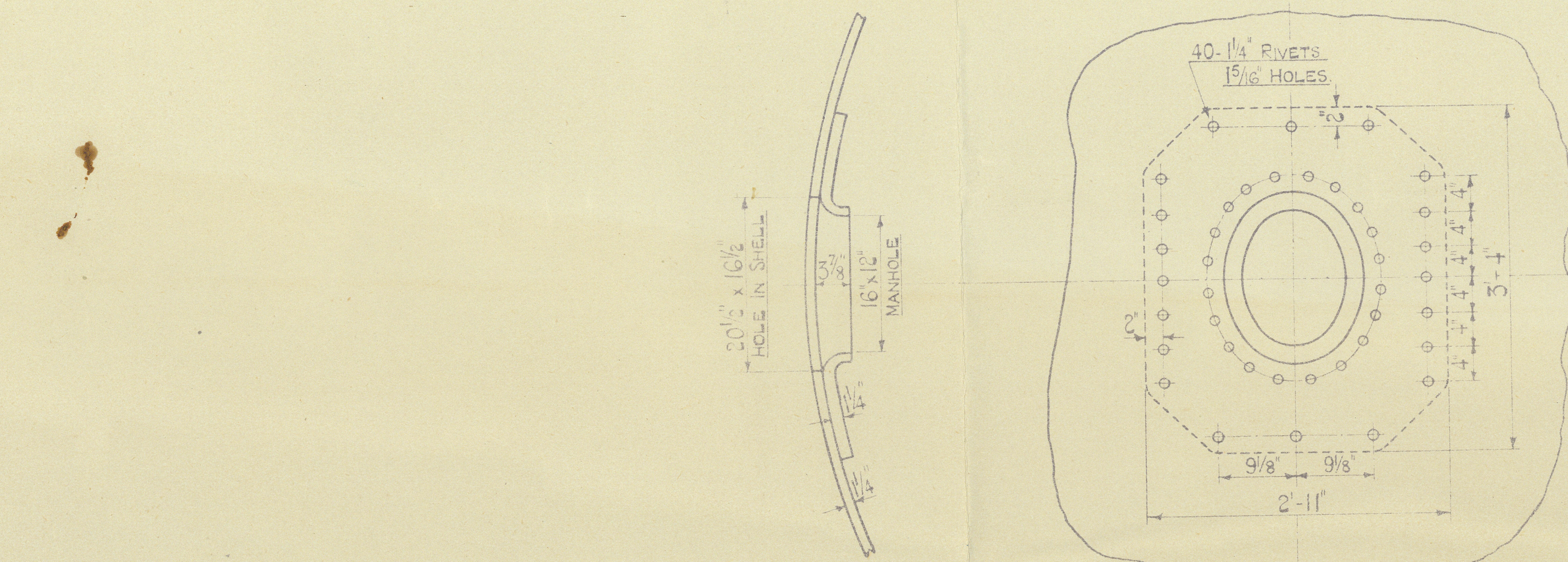
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W1195-0038



BOILER N°	REMARKS
S.B.41-3	



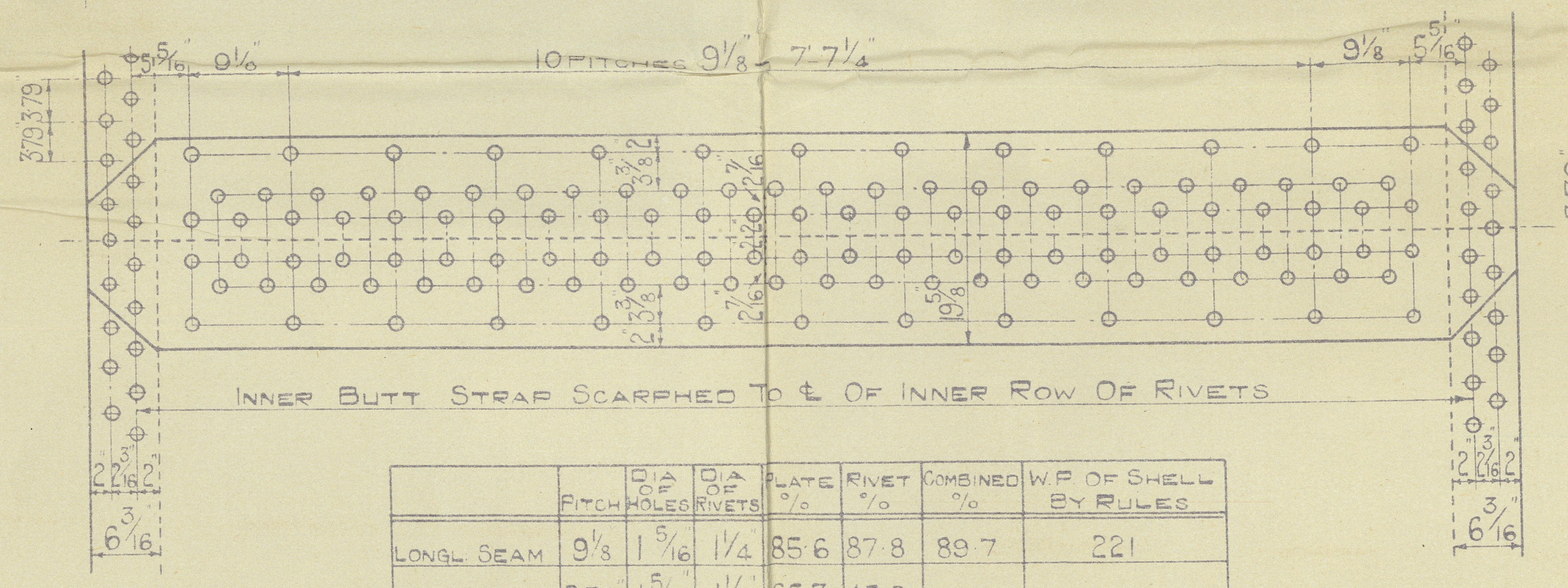
POSITIONS OF PLUGS SCREWED INTO AND WELDED TO BOILER BACK, CLOSING MOUNTING HOLES.  
1 AND 2 - HOLES FOR WATER GAUGE COLUMN.  
3 - HOLE FOR AUX. CHECK VALVE.  
MAIN FEED CHECK VALVE TO OPPOSITE HAND.

● 2" DIA. STAY  
○ 1 1/2"  
○ 1 1/4"  
○ 1 1/8"  
ALL STAYS SCREWED THRO' BOTH PLATES WITH A CONTINUOUS THREAD OF 9 THOS/INCH. NUTS FITTED AT BOTH ENDS.

SURFACES	
HEATING SURFACE - TUBES	1445
- FURNACE	131
- C.C. TOPS & SIDES	122
- C.C. BACKS	58
- TUBES	30
- TOTAL	1786
GRATE AREA (6"0 BARS)	45
RATIO HS/GA	396

	TENSILE STRENGTH	MATERIAL
SHELL PLATES	29-33 TONS	SIEMENS MARTIN STEEL
BUTT STRAPS	29-33	
MANHOLE COMP. PLATE	26-30	
GIRDER PLATES	26-32	
ALL OTHER PLATES	26-30	
FURNACE	26-30	
LONG. STAY BARS	26-32	
SCREWED STAY BARS	26-30	
RIVET BARS	26-30	
TUBES	26-32	

TUBES - HOT ROLLED WELDLESS STEEL OR LAPWELDED WROT. IRON.



	PITCH	DIA	NO. OF RIVETS	PLATE	RIVET	COMBINED WP OF SHELL	BY RULES
LONG. SEAM	9 1/8	1 1/2	1/4	85.6	87.8	89.7	221
CIRCUM. SEAM	379	1 1/8	1/4	65.3	45.2	—	—

INNER BUTT STRAP - 1 1/8 THICK  
OUTER BUTT STRAP - 1 THICK

HYDRAULIC TEST PRESSURE - 380 LBS/SQ. IN.

APPROVED  
LLOYD'S REGISTER OF SHIPPING  
*J. K. Lawrence* 12  
DATE 10/8/42



"Y.2" TYPE VESSELS.  
AUX: BOILER.

13-0 EXT. DIA. x 11-6 MEAN LENGTH. TO PASS LLOYD'S LATEST TESTS & REQUIREMENTS FOR A WORKING PRESSURE OF 220 LBS./SQ. IN. OFF - ONE.

SCALE: 1" = 1' FOOT.

SURVEYOR'S COPY. DRG: N° 31A

APPROVED BY LLOYD'S 26-12-40